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October 8, 2002

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
Attn: Mr. Robert Clark (Mail Stop O-8-E9)
Project Directorate I-1

Subject: Revision to Emergency Plan Implementing Procedures
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Gentlemen:

In accordance with 10 CFR 50.4(b)(5), enclosed are revisions to Ginna Station Emergency Plan Implementing Procedures (EPIP).

We have determined, per the requirements of 10 CFR 50.54(q), that the procedure changes do not decrease the effectiveness of our Nuclear Emergency Response Plan.

Very truly yours,

Richard J. Watts
Manager, Nuclear Training Department

Enclosures

xc: USNRC Region 1 (2 copies of letter and 2 copies of each procedure)
Resident Inspector, Ginna Station (1 copy of letter and 1 copy of each procedure)
RG&E Nuclear Safety and Licensing (1 copy of letter)
Dr. Robert C. Mecredy (2 copies of letter only)

PSP/jtw

A045

<u>PROCEDURE</u>	<u>REVISION NUMBER</u>
EPIP 2-14	15
EPIP 2-15	6
EPIP 3-1	19
EPIP 3-7	10
EPIP 4-3	11
EPIP 4-8	0
EPIP 4-9	0
EPIP 5-9	7

REPORT NO. 01
REPORT: NPSP0200
DOC TYPE: PREPIP

GINNA NUCLEAR POWER PLANT
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EMERGENCY PLAN IMPLEMENTING PROCEDURE

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PARAMETERS: DOC TYPES - PREPIP

STATUS: EF

5 YEARS ONLY:

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
EPIP-1-0	GINNA STATION EVENT EVALUATION AND CLASSIFICATION	028	05/15/02	05/15/02	05/15/07	EF
EPIP-1-1	UNUSUAL EVENT	003	11/02/01	11/02/01	11/02/06	EF
EPIP-1-2	ALERT	004	11/02/01	11/02/01	11/02/06	EF
EPIP-1-3	SITE AREA EMERGENCY	005	12/09/96	01/23/98	01/20/03	EF
EPIP-1-4	GENERAL EMERGENCY	005	11/02/01	11/02/01	11/02/06	EF
EPIP-1-5	NOTIFICATIONS	050	08/09/02	08/09/02	08/09/07	EF
EPIP-1-6	SITE EVACUATION	014	08/09/02	08/09/02	08/09/07	EF
EPIP-1-7	ACCOUNTABILITY OF PERSONNEL	009	11/02/01	11/02/01	11/02/06	EF
EPIP-1-8	SEARCH AND RESCUE OPERATION	005	12/20/01	12/20/01	12/20/06	EF
EPIP-1-9	TECHNICAL SUPPORT CENTER ACTIVATION	021	12/20/01	12/20/01	12/20/06	EF
EPIP-1-10	OPERATIONAL SUPPORT CENTER (OSC) ACTIVATION	011	08/09/02	08/09/02	08/09/07	EF
EPIP-1-11	SURVEY CENTER ACTIVATION	027	08/30/02	08/30/02	08/30/07	EF
EPIP-1-12	REPAIR AND CORRECTIVE ACTION GUIDELINES DURING EMERGENCY SITUATIONS	009	12/20/01	12/20/01	12/20/06	EF
EPIP-1-13	LOCAL RADIATION EMERGENCY	003	08/04/95	01/23/98	01/23/03	EF
EPIP-1-15	USE OF THE HEALTH PHYSICS NETWORK HPN	005	04/24/96	03/03/99	03/03/04	EF
EPIP-1-16	RADIOACTIVE LIQUID RELEASE TO LAKE ONTARIO OR DEER CREEK	004	02/13/98	02/13/98	02/13/03	EF
EPIP-1-17	PLANNING FOR ADVERSE WEATHER	002	06/21/00	06/21/00	06/21/05	EF
EPIP-1-18	DISCRETIONARY ACTIONS FOR EMERGENCY CONDITIONS	005	08/30/02	08/30/02	08/30/07	EF
EPIP-2-1	PROTECTIVE ACTION RECOMMENDATIONS	019	06/04/01	06/04/01	06/04/06	EF
EPIP-2-2	OBTAINING METEOROLOGICAL DATA AND FORECASTS AND THEIR USE IN EMERGENCY DOSE ASSESSMENT	012	07/01/02	07/01/02	07/01/07	EF
EPIP-2-3	EMERGENCY RELEASE RATE DETERMINATION	015	07/01/02	07/01/02	07/01/07	EF
EPIP-2-4	EMERGENCY DOSE PROJECTIONS - MANUAL METHOD	013	07/20/01	07/20/01	07/20/06	EF
EPIP-2-5	EMERGENCY DOSE PROJECTIONS PERSONAL COMPUTER METHOD	014	05/15/02	05/15/02	05/15/07	EF
EPIP-2-6	EMERGENCY DOSE PROJECTIONS - MIDAS PROGRAM	011	06/21/00	06/21/00	06/21/05	EF

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EPIP-2-7	MANAGEMENT OF EMERGENCY SURVEY TEAMS	011	08/09/02	08/09/02	08/09/07	EF
EPIP-2-8	VOLUNTARY ACCEPTANCE OF EMERGENCY RADIATION EXPOSURE	005	05/16/00	05/16/00	05/16/05	EF
EPIP-2-9	ADMINISTRATION OF POTASSIUM IODIDE (KI)	006	08/30/02	08/30/02	08/30/07	EF
EPIP-2-10	INPLANT RADIATION SURVEYS	004	08/09/02	08/09/02	08/09/07	EF
EPIP-2-11	ONSITE SURVEYS	019	05/15/02	05/15/02	05/15/07	EF
EPIP-2-12	OFFSITE SURVEYS	022	05/15/02	05/15/02	05/15/07	EF
EPIP-2-13	IODINE AND PARTICULATE ACTIVITY DETERMINATION FROM AIR SAMPLES	008	07/27/99	07/27/99	07/27/04	EF
EPIP-2-14	POST PLUME ENVIRONMENTAL SAMPLING	015	10/08/02	10/08/02	10/08/07	EF
EPIP-2-15	POST PLUME EVALUATION OF OFFSITE DOSES DUE TO DEPOSITION	006	10/08/02	10/08/02	10/08/07	EF
EPIP-2-16	CORE DAMAGE ESTIMATION	012	07/01/02	07/01/02	07/01/07	EF
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EPIP-3-3	IMMEDIATE ENTRY	008	12/20/01	12/20/01	12/20/06	EF
EPIP-3-4	EMERGENCY TERMINATION AND RECOVERY	008	03/12/01	03/12/01	03/12/06	EF
EPIP-3-7	SECURITY DURING EMERGENCIES	010	10/08/02	10/08/02	10/08/07	EF
EPIP-4-1	PUBLIC INFORMATION RESPONSE TO AN UNUSUAL EVENT	006	02/13/98	02/13/98	02/13/03	EF
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EPIP-4-7	PUBLIC INFORMATION ORGANIZATION STAFFING	020	06/11/02	06/11/02	06/11/07	EF
EPIP-4-9	ACTIVATION OF GINNA EMERGENCY SIRENS FROM THE TECHNICAL SUPPORT CENTER	000	10/08/02	10/08/02	10/08/02	EF
EPIP-5-1	OFFSITE EMERGENCY RESPONSE FACILITIES AND EQUIPMENT PERIODIC INVENTORY CHECKS AND TESTS	026	08/30/02	08/30/02	08/30/07	EF

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EPIP-5-2	ONSITE EMERGENCY RESPONSE FACILITIES AND EQUIPMENT PERIODIC INVENTORY CHECKS AND TESTS	029	08/30/02	08/30/02	08/30/07	EF
EPIP-5-5	CONDUCT OF DRILLS AND EXERCISES	014	07/01/02	07/01/02	07/01/07	EF
EPIP-5-6	ANNUAL REVIEW OF NUCLEAR EMERGENCY RESPONSE PLAN (NERP)	004	05/28/99	05/28/99	05/28/04	EF
EPIP-5-7	EMERGENCY ORGANIZATION	038	08/30/02	08/30/02	08/30/07	EF
EPIP-5-9	TESTING THE OFF HOURS CALL-IN PROCEDURE AND QUARTERLY TELEPHONE NUMBER CHECK	007	10/08/02	10/08/02	10/08/07	EF
EPIP-5-10	EMERGENCY RESPONSE DATA SYSTEM (ERDS)	006	03/28/02	03/28/02	03/28/07	EF
NERP	GINNA STATION NUCLEAR EMERGENCY RESPONSE PLAN	020	03/21/01	03/21/01	12/09/04	EF
TOTAL FOR PREPIP	54					

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 2-14

REV. NO. 15

POST PLUME ENVIRONMENTAL SAMPLING


RESPONSIBLE MANAGER

10/08/02
EFFECTIVE DATE

Category 1.0

This procedure contains 20 pages

POST PLUME ENVIRONMENTAL SAMPLING**1.0 PURPOSE:**

- 1.1 The purpose of the procedure is to provide guidance for the survey teams in the collection of environmental sample media, e.g, snow, grass, soil, vegetation, air samples, water samples and TLD collection.

2.0 RESPONSIBILITY:

- 2.1 The Dose Assessment Manager is responsible for implementing this procedure.

3.0 REFERENCES:

- 3.1 Development References
- 3.1.1 Nuclear Emergency Response Plan
- 3.2 Implementing References
- 3.2.1 EPIP 2-11, Onsite Surveys
- 3.2.2 EPIP 2-12, Offsite Surveys
- 3.2.3 EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure
- 3.2.4 EPIP 2-9, Administration of Potassium Iodine (KI)
- 3.2.5 RP-TLD-710A-OPS, Operation of Panasonic UD-710A TLD Reader

4.0 PRECAUTIONS:

None.

5.0 PREREQUISITES:

None.

6.0 ACTIONS:**6.1 Team Briefing**

- 6.1.1 Survey Center Manager or the Dose Assessment Manager brief the Survey Team Members.

6.1.2 Ensure that the briefing covers the following items:

- a. Team identification
- b. Communications equipment and channel
- c. Use of 3-way communications and the phonetic alphabet.
- d. Protective equipment (including use of KI)
- e. Authorized doses
- f. Survey instructions
- g. Type of data required
- h. Survey equipment
- i. Job safety briefing

6.1.3 If dose authorization is required, implement EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure.

6.1.4 If potassium iodine (KI) administration is required, take one KI tablet at this time in accordance with EPIP 2-9, Administration of Potassium Iodine (KI),

6.2 **Equipment Check/Team Preparation**

Assemble the following equipment which is not stored in the survey footlocker:

- a. Personal thermoluminescent dosimeter (TLD) for each team member.
- b. One 0-1500 mR dosimeter and 0-10R dosimeter for each team member. Sign in on the dosimeter log sheet.
- c. One full-face mask with charcoal filter and voice amplifier for each team member.
- d. Pack of six environmental TLD's from lead storage container
- e. Motorola GM 300 Mobile radio and magnetic mount antenna
- f. Gilian air sampler with filter holder
- g. RM-25 (or equivalent) radiation monitor with HP-260 probe or micro R meter
- h. Eberline RO-20 dose rate meter
- i. RADECO H-809C Portable High Volume Air Sampler with filter holder.
- j. Tools for obtaining specific types of samples, as may be necessary

k. Clean plastic bags for holding samples

l. Cellular mobile phone

6.2.2 Check operation of the following equipment using the Equipment Check and Operation Instructions contained in Attachment 1-8 of EPIP 2-12, Offsite Surveys:

a. Radio System - Motorola GM 300 (Attachment 1)

b. NEC M3800 Cellular Mobile Telephone (Attachment 2)

c. Eberline Model RM-25 (or equivalent) Frisker with HP -260 probe (Attachment 3)

d. Eberline Model RO-20 Dose Rate Meter (Attachment 4)

e. Bicron Micro REM Meter (Attachment 5)

f. GILIAN HFS-113, HFS-513A and GILAIR-5 Low Volume Air Samplers (Attachment 6)

g. RADECO H-809C High Volume Air Sampler (Attachment 7)

h. VAS-2 Earmark "Loud Mouth" Voice Amplification System (Attachment 8)

6.2.3 Obtain transportation and check vehicle for contamination by performing a direct frisk survey on the horizontal surfaces with the HP-260 probe and count rate meter (RM-14 or equivalent) in accordance with Attachment 6.

6.2.4 If the vehicle survey indicates surface contamination greater than 250 cpm above background, contact the Survey Center Manager for instructions.

6.2.5 Load survey equipment into vehicle, fill in Survey Team Status Board, and inform Survey Center Manager you are ready for departure. (Alternatively, team may be deployed from EOF by Dose Assessment Manager).

6.2.6 Log time, date, and survey team members on survey map.

6.2.7 Establish radio communications with Technical Support Center or EOF Radio Operator as appropriate and advise of teams departure.

6.2.8 If directed by the Dose Assessment Manager, don protective clothing and full face masks with iodine filters.

REFER TO THE FOLLOWING SECTIONS FOR SPECIFIC SAMPLING TASKS:

- Section 6.3 - TLD Placement and Collection
 - Section 6.4 - Post Accident Environmental Monitoring
 - Section 6.5 - Water Sampling
 - Section 6.6 - Milk Sampling
 - Section 6.7 - Snow Sampling
 - Section 6.8 - Land Sampling for Contamination
 - Section 6.9 - Grass Sampling
 - Section 6.10 - Non Grass Areas
 - Section 6.11 - Vegetation Sampling
-

6.3 TLD Placement and Collection

- 6.3.1 Place or replace environmental TLD's at the locations shown on Attachment 2
- 6.3.2 TLDs may be collected as deemed necessary by the Dose Assessment Manager, to evaluate the radiation doses to the environs. Consider collecting TLDs after 4 hours, 1 day or 7 days depending on release duration and release magnitude.
- 6.3.3 Refer to Attachment 1 for direction and distance of permanent TLDs.

6.4 Post-Accident Environmental Monitoring

- 6.4.1 The Dose Assessment Manager may send individuals to collect these filters as he deems necessary.
- 6.4.2 Instructions for changing the filters are included inside of each sample station. Attachment 3 shows onsite air monitoring stations.
- 6.4.3 Fall out precipitation collectors may be exchanged and analyzed before the scheduled time in order to aid in evaluating the releases.
- 6.4.4 Refer to Attachment 1 for direction and distance of sample stations.

6.5 Water Sampling

NOTE: NO RADIOACTIVITY IS NORMALLY FOUND IN WATER SAMPLES WITH THE EXCEPTION OF NATURALLY OCCURRING K-40.

- 6.5.1 Water samples from Deer Creek and/or Lake Ontario should be taken as appropriate for the type and direction of release as deemed necessary by the Dose Assessment Manager.

- 6.5.2 Refer to Attachment 1 for direction and distance of Water Sampling locations normally a 1 gallon sample is appropriate.

6.6 **Milk Sampling**

NOTE: NO RADIOACTIVITY IS NORMALLY FOUND IN MILK SAMPLES WITH THE EXCEPTION OF NATURALLY OCCURRING K-40.

- 6.6.1 Milk collection points are shown in Attachment 4 from which appropriate sample points should be selected and samples collected as deemed necessary by the Dose Assessment Manager.
- 6.6.2 Refer to Attachment 1 for direction and distance of Milk Sampling locations normally a 1 gallon sample is appropriate.

6.7 **Snow Sampling**

NOTE: SNOW SAMPLES ARE DEPENDENT UPON SEVERAL WEATHER RELATED VARIABLES; A) RATE OF SNOWFALL AT, AND SINCE TIME OF RELEASE; B) AIR TEMPERATURES SINCE SNOWFALL OF INTEREST OCCURRED; C) WIND SPEED AND DIRECTION; D) SUNSHINE, RAIN OR OTHER WEATHER CONDITIONS OCCURRING AFTER SNOWFALL OF INTEREST.

- 6.7.1 Select the area to be sampled from the general location requested by the Dose Assessment Manager. Choose a location that has not been subjected to non-meteorological disturbances (plowing, snowmobiles, pedestrians, etc.).

NOTE: SNOW FALLING OR SNOW ON GROUND AT TIME OF DEPOSITION MAY HAVE DRIFTED. MELTING AND FREEZING AND/OR RAIN MAY MEAN THE SNOW DEPOSITION IS FIXED IN AN ICE LAYER AND NOT AFFECTED BY WINDS. THESE POSSIBILITIES MUST BE CONSIDERED AND EXISTING WEATHER CONDITIONS USED TO DETERMINE AREA TO BE SAMPLED.

- 6.7.2 Take radiation reading with survey meter(s) three inches and three feet above surface of snow, record on the Environmental Data Sheet (Attachment 5).

- 6.7.3 Measure the selected area to be sampled in units of square feet.

NOTE: IF A CURRENT LAYER MAY HAVE FORMED ON AN EARLIER SNOWFALL, COLLECT SNOWFALL FROM SURFACE TO THIS CRUST. IF SNOW OF INTEREST MAY BE BELOW A CRUST LAYER FORMED LATER, SWEEP LOOSE SNOW AWAY TO THIS CRUST LAYER AND THEN SAMPLE THE CRUST LAYER AND LOOSE SNOW TO THE NEXT CRUST LAYER.

- 6.7.4 Sample up snow to a depth sufficient to collect snow of interest.

- 6.7.5 Sample volume of melted snow should be equal to the amount necessary to fill a one gallon container. Loose snow volume is 4 times its liquid volume. Icy snow is approximately twice its liquid volume. The snow should be packed in the collection bag.
- 6.7.6 Measure the depth of snow in inches.
- 6.7.7 Securely close the sample bag to prevent leakage. It is recommended that all samples be double bagged to prevent leakage as snow melts.
- 6.7.8 Re-measure radiation levels at three inches and three feet. Record on the Environmental Data Sheet (Attachment 5).
- 6.7.9 Record the following data on the environmental Data Sheet (Attachment 5):
- a. Location requested
 - b. Specific area selected
 - c. Area sampled in square feet
 - d. Depth sampled
 - e. Direction and approximate feet from permanent reference object
 - f. Weather conditions
 - g. Time of sample
 - h. Radiation readings at one centimeter and one meter before and after sampling
- 6.8 **Land Sampling for Contamination**
- 6.8.1 Restrict passage through the area when possible by cordoning off with ropes.
- 6.8.2 Establish a grid system of reasonable size squares in area to be surveyed: i.e. 20 ft. by 20 ft. square for low contamination ; 10 ft. by 10 ft. square for moderate contamination; 5 ft. by 5 ft. square for heavy contamination.
- 6.8.3 Slowly walk along centerline of grid squares holding survey instrument three feet above ground or as directed by the Dose Assessment Manager. Note readings of instrument for deviations from background measurements.
- 6.8.4 Record reading at center point of each square.
- 6.8.5 Prepare a map of area surveyed using recorded readings and approximate area of contamination.
- 6.8.6 If the Survey Area involves hard surfaces (e.g. sidewalk, driveways, rooftops, large rock surfaces) and Dose Assessment requests smears taken, smear surfaces in accordance with instructions in Contamination Surveys. (Attachment 6).

6.9 GRASS SAMPLING

- 6.9.1 Take samples at locations identified for environmental sampling.
- 6.9.2 Survey three inches and three feet above the surface to determine maximum activity in general area of interest.
- 6.9.3 Select specific area to be sampled determined by size of sample necessary.
- 6.9.4 Measure selected sampling area in units of square feet.
- 6.9.5 Take radiation readings three inches and three feet above the surface of area to be sampled.
- 6.9.6 Clip grass in sample area as close to the roots as possible without including dirt in the sample. Grass sample should fill approximately a volume of one gallon if possible.

NOTE: DO NOT PULL UP CLUMPS OF GRASS AND DIRT AND SUBMIT AS SAMPLE. THIS SAMPLE WOULD BE MEANINGLESS FOR DETERMINATION OF CONTAMINATION.

NOTE: NO RADIOACTIVITY IS NORMALLY FOUND IN GRASS SAMPLES WITH THE EXCEPTION OF NATURALLY OCCURRING K-40.

- 6.9.7 Collect top ½ inch of soil from area in which grass was clipped as a second sample.
- 6.9.8 Re-measure radiation levels at three inches and three feet above surface.
- 6.9.9 Record the following on the Environmental Data Sheet (Attachment 5):
 - a. Sample location
 - b. Area sampled in square feet
 - c. Depth of soil sampled
 - d. Location on grid or number of feet and direction from permanent reference object.
 - e. Time of Sample
 - f. Radiation readings before and after sampling
 - g. Sample identification
 - h. Survey meter used
- 6.9.10 Tag sample bag to clearly identify sample.

6.10 Non-Grass Areas

NOTE: NO RADIOACTIVITY IS NORMALLY FOUND IN ENVIRONMENTAL SAMPLES WITH THE EXCEPTION OF CS-137 AT 160 pCi/kg AND NATURALLY OCCURRING K-40.

- 6.10.1 Take sample at locations identified for environmental sampling.
- 6.10.2 Survey three inches and three feet above the surface.
- 6.10.3 If leaves and/or other debris, other than sticks are in the selected area, they should be collected as a separate sample.
- 6.10.4 Re-measure radiation levels if leaves have been collected for sample.
- 6.10.5 Collect top ½ inch of soil from area selected if level. Collect small plugs of soil if roughly plowed field. Plugs can cover larger area but give approximate square feet area approximately 1 gallon container should be collected.
- 6.10.6 Re-measure radiation levels at three inches and three feet.
- 6.10.7 Record the following on the Environmental Data Sheet (Attachment 5):
 - a. Sample location
 - b. Area sampled in square feet
 - c. Depth of soil sampled
 - d. Location on grid or number of feet and direction from permanent reference object.
 - e. Time of Sample
 - f. Radiation readings before and after sampling
 - g. Sample identification
- 6.10.8 Tag sample bag to clearly identify sample.
- 6.11 **Vegetation Sampling**
 - NOTE: NO RADIOACTIVITY IS NORMALLY FOUND IN VEGETATION SAMPLES WITH THE EXCEPTION OF NATURALLY OCCURRING K-40.**
 - 6.11.1 Choose vegetation to be sampled based on deposition possibilities and availability for sufficient sample size.

NOTE:

LEAVES SHOULD BE SAMPLED FROM TOP MOST PART OF TREE. DEPOSITION IS UNLIKELY ON LEAFY AREAS UNDER TALLER TREES OR BUSHES. GROUND COVERS SUCH AS BURDOCK, LETTUCE OR FLOWERS SHOULD BE SELECTED FROM OPEN AREAS. LARGE LEAFY VEGETATION IS BETTER THAN SMALL. IF RAIN HAS OCCURRED SINCE THE RELEASE, DEPOSITED CONTAMINATION MAY HAVE BEEN WASHED OFF.

- 6.11.2 Take as large a sample as possible considering that it will be compressed into a 1 gallon container.
- 6.11.3 Record the following on the Environmental Data Sheet (Attachment 5):
 - a. Location of sample
 - b. Type of sample
 - c. Time of sample
 - d. Other data necessary for full descriptive purposes
- 6.11.4 Tag sample bag to clearly identify sample.
- 6.12 **Decontamination/Sample Return**
- 6.12.1 Inform Survey Center Manager of team return.
- 6.12.2 Upon returning to the Survey Center, perform a personnel frisk in accordance with Attachment 6. Document results on Survey Team Attachment Form (Attachment 7).
- 6.12.3 If any contamination greater than 100 CPM above background is found, contact the Survey Center Manager for decontamination instructions.
- 6.12.4 Conduct a vehicle contamination survey by direct frisk in accordance with Attachment 6. Document results on Attachment 7.
- 6.12.5 If any contamination greater than 250 cpm above background is found, contact the Survey Center Manager for decontamination instructions.
- 6.12.6 Return all samples and data sheets and Survey Team Attachment Forms to the Survey Center Manager.
- 6.12.7 TLD's are processed in accordance with RP-TLD-710A-OPS, Operation of Panasonic UD-710A TLD Reader.
- 6.12.8 Dispose of contaminated and potentially contaminated waste in an approved manner.
- 6.12.9 Re-stock and inventory survey team equipment foot-locker. Stow equipment in its designated location.

- 6.12.10 Return radio system, cellular phone, portable air sampler, radiation count rate meter and dose rate meter to the Survey Center equipment area and place on charge as appropriate. Response check all survey meters prior to returning to storage. Notify the Survey Center Manager if any meters do not response check properly.
- 6.12.11 Return 0-1500mR and 0-10R dosimeters and sign-out on dosimeter log sheet.

7.0 **ATTACHMENTS**

1. Direction And Distance To Sample Points
2. Post Accident TLD Locations For Survey Teams
3. Permanent Post Accident TLD Locations
4. Location Of Dairy Farms
5. Environmental Data Sheet
6. Contamination Surveys
7. Survey Team Attachment Form

DIRECTION AND DISTANCE TO SAMPLE POINTS
 All directions given in degrees and all distances given in miles.

Air Sample Stations			TLD Location		
	Direction	Distance		Direction	Distance
#2	87	0.20	#2	87	0.20
#3	110	0.26	#3	110	0.26
#4	140	0.16	#4	140	0.16
#5	185	0.10	#5	185	0.10
#6	232	0.14	#6	232	0.14
#7	257	0.14	#7	257	0.14
#8	258	11.98	#8	258	11.9
#9	235	7.1	#9	235	7.1
#10	185	8.1	#10	185	8.1
#11	123	7.1	#11	123	7.1
#12	93	15.6	#12	93	15.6
#13	194	0.43	#13	292	0.14
			#14	292	0.48
			#15	272	0.53
			#16	242	0.56
			#17	208	0.31
			#18	193	0.40
			#19	177	0.25
			#20	165	0.42
			#21	145	0.37
			#22	128	0.50
			#23	107	0.42
			#24	90	0.39
			#25	247	8.9
			#26	223	9.2
			#27	202	9.1
			#28	145	11.0
			#29	104	8.6
			#30	103	12.7
			#31	263	4.5
			#32	246	4.3
			#33	220	4.9
			#34	205	4.3
			#35	193	4.7
			#36	174	3.5
			#37	158	3.7
			#38	137	4.4
			#39	115	4.1
			#40	87	4.1

WATER SAMPLE LOCATIONS

	DIRECT	DIST.
Russell Station	270	15.9
Ontario Water District Intake	70	1.4
Circ Water Intake	0	0.26
Circ Water Discharge	15	0.08
Deer Creek	105	0.16
Well B	150	0.40
Tap Onsite Sink		
Rainfall #3	110	0.26
Rainfall #5	185	0.10
Rainfall #8	258	11.9
Rainfall #10	185	8.1
Rainfall #12	93	15.6

MILK SAMPLE LOCATIONS

	DIRECT	DIST.
Farm A	113	0.60
Farm B	242	3.4
Farm C	156	3.1
Farm D	132	15.6

Fish Samples
 Indicator Samples
 Background Samples

Lake Ontario Discharge Plume
 Russell Station

Produce Samples
 Indicator Samples
 Background Samples

Grown on property surrounding Plant
 Purchase from farms > 10 miles

POST ACCIDENT TLD LOCATIONS FOR SURVEY TEAMS

<u>INTERSECTION NUMBER</u>	<u>LOCATION</u>
2 ESE	Lake Road and Knickerbocker Road
2 SE	Knickerbocker Road and Brick Church Road
2 S	Ontario Center Road and Brick Church Road
2 SSW	Slocum Road and Brick Church Road
3 SW	Lakeside Road and Boston Road
2 WSW	Lake Road and Lakeside Road
2 W	Roder Parkway and Ontario Drive
3 ESE - 2	Fisher Road and Shepard Road
----	Fisher Road and Trimble Road
----	Arbor Road and Trummonds Road
----	Walworth
6 E	Pultneyville
----	Tuckahoe Road and Salmon Creek Road
5 SW - 1	County Line Road and Berg/Schlegel Road
9 SW - 2	State Road and Route 250
----	Plank Road and Salt Road
----	Penfield Road (Route 441) and Five Mile Line Road
6 WSW	Salt Road and Schlegel Road
----	Lake Road and Route 250
8 SSW - 1	Plank Road and County Line Road
----	Route 21 and Farnsworth Road
----	Route 21 and Pound Road
4 SE	Kenyon Road and Furnace Road
----	Plank Road and Five Mile Line Road
----	Eddy Ridge Road and Ridge Road

Location of TLDs (Permanent and Placed by Survey Teams)

ROCHESTER GAS & ELECTRIC CORP.

GINNA STATION

MAY 1992

Permanent TLD T2

Placed by Survey Team O

MAY 1992

LAKE ONTARIO

T6

10 MILES

M8

M6

M5

M1

W1

W2

W3

W4

W5

W6

W7

M9

M7

M2

M3

M4

M5

M6

M7

M8

M9

M10

M11

M12

M12

M11

M10

M9

M8

M7

M6

M5

M4

M3

M2

M1

M0

M11

M10

M9

M8

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M6

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M-1

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M7

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M4

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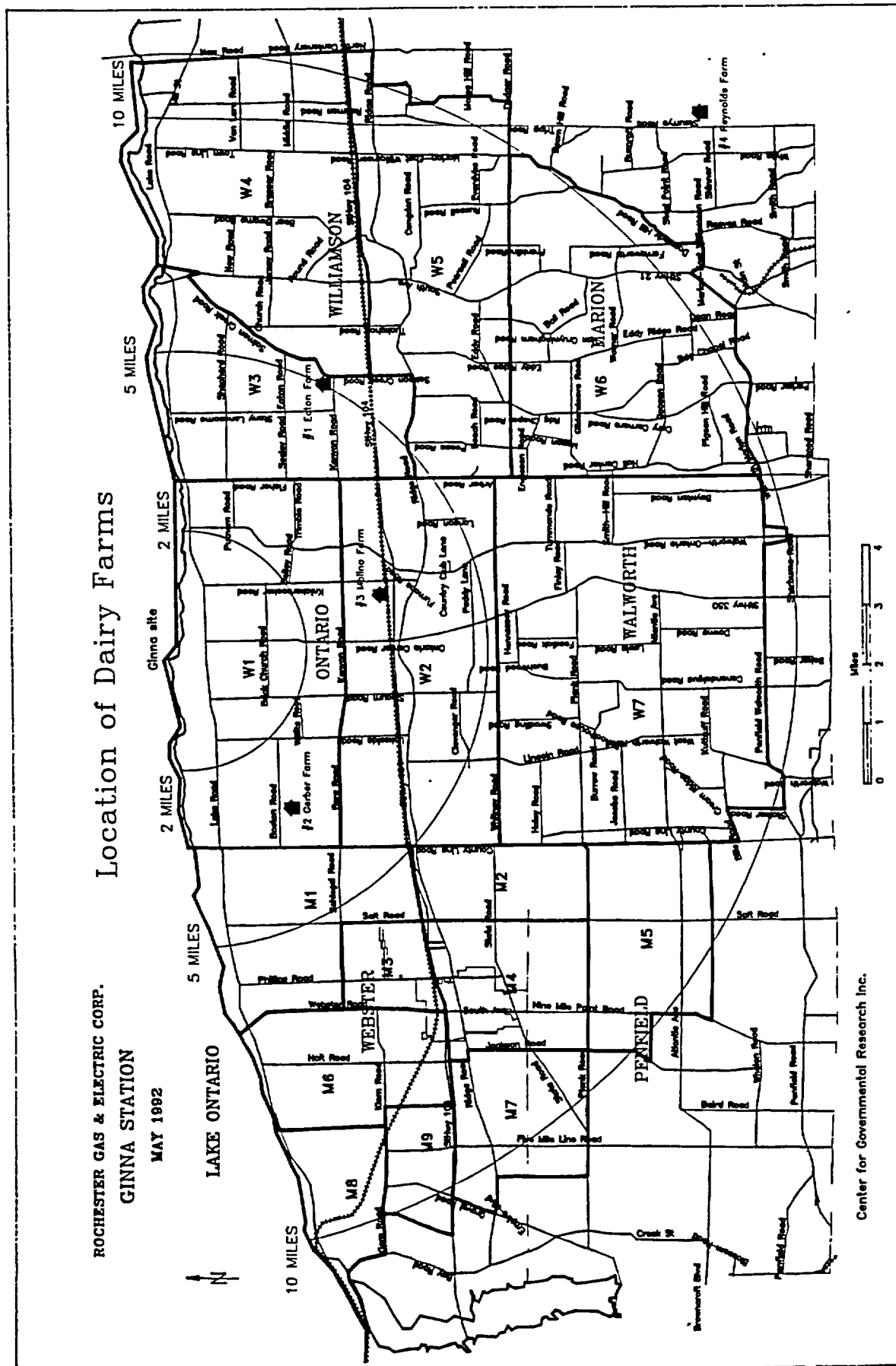
PERMANENT POST ACCIDENT TLD LOCATIONS

- #1 - Not used
- #2 - Onsite - Manor House yard
- #3 - Onsite - In field 200 ft. SE of Station #2
- #4 - Onsite - Training Center yard driveway circle
- #5 - Onsite - Between creek and plant entry road
- #6 - Onsite - SW side of plant parking lot
- #7 - Onsite - Power pole along west plant fence
- #8* - Topper Drive - Irondequoit, Seabreeze Substation #51
- #9* - Phillips Road - Webster - Intersection with Highway #104, Substation #74
- #10* - Walworth, Substation #230
- #11 - W. Main St. - Williamson, behind Cheetam Ins. Agency Bldg, Substation #207
- #12 - Seaman Ave. - Sodus Point - Off Lake Road by Sewer District, Substation #209
- #13 - At corner of plant restricted area fence and dogleg to west
- #14 - NW corner of field along lake shore
- #15 - Field across road, west side of orchard, ~3000 ft. west of plant
- #16 - SW corner of orchard, ~ 3000 ft. west of plant, ~ 200 ft. north of Lake Road
- #17 - Power pole in orchard, ~ 75 ft. north of Lake Road
- #18 - ~ 30 ft. north of NE corner of Substation #13A fence
- #19 - ~ 100 ft. east of plant access road, behind house
- #20 - ~ 150 ft. west of Ontario Center Road and ~ 170 ft. south of Lake Road by RG&E property marker

* Requires special lock key for substations.

PERMANENT POST ACCIDENT TLD LOCATIONS

- #21 - North side of Lake Road, ~ 200 ft. east of Ontario Center Road
- #22 - North side of Lake Road, SE property corner
- #23 - East property line, midway between Lake Road and Lake Shore
- #24 - Lake shore near NE corner of property
- #25 - Substation #73, Klem Road adjacent to 897 Klem Road
- #26 - Service center; Plank Road west of 250
- #27 - Atlantic Ave at Wayne-Monroe County Line, Penfield side
- #28 - Substation #193, Marion, behind Stanton Ag. Service, North Main Street
- #29 - Substation #208, Town Line Road (CR 118); 1000 ft. north of 104
- #30 - District Office, Sodus; fence near gas pumps at rear
- #31 - Lake Road, pole 20 ft. north of road; 500 ft. east of Salt Road
- #32 - Woodard Road at County Line Road. Pole northwest corner
- #33 - County Line Road at R.R. Tracks; pole - 100 ft. east along tracks
- #34 - Lincoln Center Road, pole midway between Ridge Road and Rt. 104
- #35 - Transmission Right of Way; northside of Clevenger Road
- #36 - Substation #205, Rt. 104, east of Ontario Center Road, SW corner of fence
- #37 - Railroad Ave., pole at 2048
- #38 - Fisher Road at R.R. Tracks, Pole east of road
- #39 - Seeley Road; pole southside, 100 ft. west of intersection with Stony Lonesome Road
- #40 - Lake Road at Stony Lonesome, pole at SE corner



DOCUMENTATION FORM

(Use EPIP 2-15 for evaluation of results)

ENVIRONMENTAL DATA SHEET

Type of Sample: _____

Sample Number: _____

Date: _____

Time: _____

Person taking sample: _____

Location: _____

Survey Meter used: _____

Serial No.: _____

Draw Map

Reference Object: _____

Direction: _____

Distance: _____ ft. _____ ft.

Area: _____ sq. ft.

Depth: _____ inches

BEFORE SAMPLING:AFTER SAMPLING:

Radiation Reading @ 3" _____

Radiation Reading @ 3" _____

Radiation Reading @ 3' _____

Radiation Reading @ 3' _____

Weather conditions: _____

Other comments:

CONTAMINATION SURVEYS

COLLECTING AND COUNTING SMEAR SAMPLES

NOTE: **DO NOT TOUCH THE METER PROBE TO ANY SURFACE BEING SURVEYED. PROBE CONTAMINATION MAY RESULT.**

PERSONNEL FRISK

1. Obtain a RM-25 with a HP-260 pancake probe or equivalent survey meter.
2. Check the background count rate.
3. Slowly pass the meter probe over a person (i.e., within ½ inch from the person) moving it at a rate of 1 to 2 inches per second.
4. Listen to the audible count rate and watch the meter for any increases.
5. Resurvey areas showing an increased count rate.
6. When contamination is suspected, hold the detector over that area for 15 seconds to obtain the gross count rate.
7. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
8. Notify the Survey Center Manager if the net count rate is greater than 100 CPM.

DIRECT FRISK SURVEY (OBJECTS)

1. Obtain a RM-25 with a HP-260 pancake probe or equivalent survey meter.
2. Check the background count rate.
3. Slowly pass the meter probe over an object or area surface (i.e., within ½ inch from it) moving it at a rate of 1 to 2 inches per second.
4. Listen to the audible count rate and watch the meter for any increases.
5. Resurvey areas showing an increased count rate.
6. When contamination is suspected, hold the detector over that area for 15 seconds to obtain the gross count rate.

7. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
8. Notify the Survey Center Manager if the net count rate is greater than 250 CPM.

SMEAR SURVEY

1. Obtain cloth smears with adhesive backing mounted on waxed paper.
2. Obtain a RM-25 with a HP-260 pancake probe or equivalent survey meter.
3. Check the background count rate.
4. Mark the smears with sequential numbers (e.g. 1,2,3,.....).
5. Holding the smear paper between the thumb, index and middle fingers and applying medium pressure, smear an area 100 cm² (approximately 4 inches by 4 inches). A 16-inch "S" pattern can also be used.
6. Record the smear location by writing the smear number on the map and circling it.
7. Hold the smear paper within ½ of the meter probe until the meter indication stabilizes. This is the gross count in CPM.
8. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
9. Record the net count as CPM 100 cm² on the back of the map next to the corresponding smear number.

NOTE: STEP 10 DOES NOT APPLY TO ENVIRONMENTAL SMEARS.

10. Notify the Survey Center Manager if the net count rates exceed 1000 CPM 100 cm².
11. Return completed contamination surveys and smears to the Survey Center Manager.

SURVEY TEAM: _____

[illegible]

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 2-15

REV. NO. 6

POST PLUME EVALUATION OF OFFSITE DOSES

DUE TO DEPOSITION



RESPONSIBLE MANAGER

10/08/02

EFFECTIVE DATE

Category 1.0

This procedure contains 8 pages

EPIP 2-15**POST PLUME EVALUATION OF OFFSITE DOSES DUE TO DEPOSITION****1.0 PURPOSE:**

- 1.1 This procedure provides methods of estimating dose resulting from the deposition of radioactive material transported by a plume. Deposition of radioactive material can result in exposure to people through ingestion of contaminated food or water, external exposure from standing on contaminated ground, and inhalation of re-suspended radionuclides.
- 1.2 This procedure provides protective action recommendations (PARs) that can be made based on measured area deposition, forage concentration and milk activity. The preventive Protective Action Guide (PAG) establishes levels that cause minimal impact on the food supply by preventing or reducing the concentration of radioactivity in food or animal feed. The preventive PAG is used when projected doses from ingestion can exceed 0.5 rem to the whole body or 1.5 rem to the thyroid.
- 1.3 The emergency PAG establishes levels at which contaminated food should be isolated from commerce because of greater projected health hazards.
- 1.4 The emergency PAG is used when projected doses from ingestion can exceed 5 rem to the whole body or 15 rem to the thyroid.

2.0 RESPONSIBILITY:

The TSC or EOF Dose Assessment Manager is responsible for implementing this procedure.

3.0 REFERENCES:

- 3.1 Developmental References
 - 3.1.1 Nuclear Emergency Response Plan
 - 3.1.2 NYS Radiological Emergency Preparedness Plan
 - 3.1.3 EPA-400, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (1991)
 - 3.1.4 USNRC Regulatory Guide 1.109
 - 3.1.5 FDA "Accidental Radioactive Contamination of Human Food and Animal Feeds: Recommendations for State and Local Agencies", August 13, 1998

3.2 Implementing References

3.2.1 EPIP 2-14, Post Plume Environmental Sampling

4.0 PRECAUTIONS:

None.

5.0 PREREQUISITES:

None.

6.0 ACTIONS:

6.1 Ingestion Pathway Sampling

- 6.1.1 State, Federal and RG&E environmental survey teams will collect field samples so the offsite levels of radioactive deposition can be determined. The results of the isotopic analysis of samples collected by RG&E and results of surveys made by RG&E will be provided to New York State. The State will use all sample results to determine whether any protective actions are warranted to limit exposure to the public through the food and water pathways.

6.2 Implementation of Protective Action Recommendations

- 6.2.1 The State will determine if any protective actions are necessary to limit exposure to the public based on the Federal Drug Administration Protective Action Guides. If the protective action guides are exceeded the State will implement necessary protective actions. RG&E Dose Assessment should perform an independent determination and advise the State if the protective action guides are exceeded.

6.3 Protective Action Revision and Termination

- 6.3.1 The State decides whether protective actions should be revised or terminated.

6.4 Predetermined Protective Action Recommendations

- 6.4.1 If a Site Area Emergency is declared the State will issue an immediate advisory to place all milk animals within two miles on stored feed.
- 6.4.2 If a General Emergency is declared, the State will issue an immediate advisory to place all milk animals within ten miles on stored feed.

6.5 External Dose from Surface Contamination

- 6.5.1 The external dose from deposition can be determined by surveying the ground surface to obtain the dose rate and multiplying by the projected exposure time.
- 6.5.2 Surveys are conducted using a dose rate meter and taking readings three feet from the surface. A micro-R meter can be used to survey areas of low level surface contamination.
- 6.5.3 Compile ground survey readings to establish the preliminary deposition "footprint". Provide ground survey data summaries to the State for use in re-entry, relocation and long term recovery
- 6.5.3.1 The protective action recommended is dependent on the half-life of the contaminant, the nature of the contaminated surface, weather conditions and the magnitude and extent of the contamination. The protective actions range from washing of the contamination by simple hosing to sheltering, followed by evacuation, depending on the severity of the contamination problem.
- 6.5.3.2 If personal contamination of the public is anticipated prior to taking shelter, recommendations will be made to wash exposed parts of the body, shower and change clothes as soon as practical.

6.6 Projection of Deposition

- 6.6.1 Determine the area for which the protective action analysis is to be made.
- 6.6.2 Determine the projected ground deposition activity. This is done by obtaining Xu/Q values from EPIP 2-4. Then, multiplying the release rate of the isotope in $\mu\text{Ci}/\text{sec}$, the Xu/Q , the deposition velocity of $0.01 \text{ m}/\text{sec}$, $1\text{E}6 \mu\text{Ci}/\text{Ci}$, and the release duration.

$$\text{___ Ci/sec} \times \text{___ sec-mph/m}^3 \times 0.01 \text{ m/sec} \times 1\text{E}6 \mu\text{Ci/Ci} \text{___ sec} = \text{___ } \mu\text{Ci/m}^2$$

- 6.6.3 Measured ground activity levels and sample results may not be available for hours or days. Ground deposition activity can be measured by surveying with a HP-260 GM probe or equivalent. Survey at three inches from the surface and multiply net cpm by $2.5\text{E}-03$ to obtain mCi/m^2 . Survey at three feet from the surface and multiply net cpm by 33 to obtain mCi/m^2 .
- 6.6.4 Indicate on USGS topographical maps, or equivalent, the location where the sample originated.
- ## 6.7 Sample Collection
- 6.7.1 Samples are collected by Survey Teams using EPIP 2-14 by RG&E survey teams or an equivalent State procedure.

6.8 Sample Analysis

- 6.8.1 Samples should be analyzed using a gamma spectrometer. The analysis can be performed by RG&E at the Ginna site, by New York State environmental lab in Albany, or by a contractor such as the NYPA laboratory in Fulton, NY.
- 6.8.2 There is normally no measurable radioactivity normally in the environment with the exception of naturally occurring K-40 and Cs-137 from previous fall-out. Cs-137 in soil which has an average value of 160 pCi/kg around Ginna.
- 6.8.3 Use the following table to assess samples. If the values in the sample are above the table values, recommend to New York State to prevent ingestion of the food sampled.

Recommended Derived Intervention Levels (DIL) or Criterion
for Each Radionuclide Group^{(a), (b)}

All Components of the Diet		
Radionuclide Group	(Bq/kg)	(pCi/kg)
Sr-90	160	4300
I-131	170	4600
Cs-134 + Cs-137	1200	32,000
Pu-238 + Pu-239 + Am-241	2	54
Ru-103 + Ru-106 ^(c)	$(C_3/6800) + (C_6/450) < 1$	$(C_3/1.8E5) + (C_6/1.2E4) < 1$

Notes:

- (a) The DIL for each radionuclide group (except for Ru-103 + Ru-106) is applied independently. Each DIL applies to the sum of the concentrations of the radionuclides in the group at the time of measurement.
- (b) Applicable to foods as prepared for consumption. For dried or concentrated products such as powdered milk or concentrated juices, adjust by a factor appropriate to reconstitution, and assume the reconstituted water is not contaminated. For spices, which are consumed in very small quantities, use a dilution factor of 10.
- (c) Due to the large difference in DILs for Ru-103 and Ru-106, the individual concentrations of Ru-103 and Ru-106 are divided by their respective DILs and then summed. The sum must be less than one. C_3 and C_6 are the concentrations, at the time of measurement, for Ru-103 and Ru-106 respectively.

NOTE: These DILs apply to consumable foods sampled. The FDA DILs provide a large margin of safety for the public because each DIL is set according to a conservatively safe level for the most vulnerable group of individuals. In addition, food would be restricted if radionuclide concentrations reach or exceed a DIL at any point in time, even though the concentrations need to be sustained for an extended period of time for the dose to actually reach the PAG. Food with concentrations below the DILs is permitted to move in commerce without restrictions. Food with concentrations at or above the DILs is not normally permitted into commerce. However, State and local officials have the flexibility in whether or not to apply restrictions.

- 6.8.4 Assessment of the effective days of intake should consider the specific food, the population involved, the food distribution system and the radionuclide. Whether the food is distributed to the retail market or produced for home use will significantly affect the intake in most instances. While assessment of intake should be on a case-by-case basis, some general comments may be useful in specific circumstances.
- 6.8.5 For short half-life radionuclides, radioactive decay will limit the ingestion of radioactive materials and the effective "days of intake". The "effective" days of intake in this case is 1.44 times the radiological half-life. For iodine-131 (half-life of 8.05 days), the effective "days of intake" is 11 days.
- 6.8.6 Where the food product is being harvested on a daily basis, it may be reasonable to assume reduction of contamination due to weathering. As an initial assessment, it may be appropriate to assume a 14-day weathering half-life (used for forage in pasture/cow/milk pathway) pending further evaluation. In this case, the effective "days of intake" is 20 days. A combination of radioactive decay and weathering would result in an effective half-life for iodine-131 of 5 days and reduce the "days of intake" to 7 days.
- 6.8.7 In the case of food which is sold in the retail market, the effective "days of intake" would probably be limited by the quantity purchased at a given time. For most food, especially fresh produce, this would probably be about a 1 week supply. In some cases, larger quantities would be purchased for home canning or freezing. For most foods and members of the public, an effective "days of intake" of 30 days is probably conservative.

6.9 Protective Action Recommendations

- 6.9.1 Recommend any of the following protective actions to reduce the exposure from ingestion for the milk pathway.

Farms

- Remove lactating dairy animals from contaminated pasturage, move the animals in-doors, and provide uncontaminated feed (had been stored in-doors or covered out-of-doors)

- Provide animals with uncontaminated water. Sources may be covered wells, covered cisterns, and closed storage tanks. Do not use surface water such as streams, ponds or open reservoirs.
- If individual milkings cannot be stored in separate tanks, take a representative one-gallon sample from each milking, label and refrigerate. Samples will be picked up by a survey team.
- Store for a prolonged period of time at reduced temperature.
- Prevent introduction of milk supplies into commerce.

Processor

- Withhold contaminated milk from the market to allow radioactive decay of the short-lived radionuclides. This may be achieved by storing frozen fresh milk, frozen concentrated milk, frozen concentrated milk products.
- Store for a prolonged period of time at a reduced temperature in conjunction with a special pasteurization process using ultra high temperatures.
- Divert the production of fluid milk for the production of dry whole milk, non-fat dry milk, butter or evaporated milk.
- Attempt to store all incoming shipments in separate tanks and segregate milk not originating in the 50-mile EPZ.
- Take a one-gallon representative sample of each incoming shipment, label (source, date/time of arrival, carrier, volume, in-plant storage tank, etc) and refrigerate. Samples will be picked up by a survey team.

Public

- Fresh milk on hand prior to the advisory and stored in closed containers may be used.
- Dry or canned milk in closed containers may be used.

6.9.2 Recommend any of the following protective actions to reduce the exposure from ingestion for the drinking water pathway.

All

- Do not use surface water (streams, lakes, ponds) for human or animal consumption.
- Limit the ingestion of potable water (either for drinking or cooking) until the source has been checked and approved for consumption.
- Water stored in closed containers or vessels prior to the incident may be ingested. This includes refrigerator storage, closed tanks, covered wells, etc.
- Bottled water and canned beverages and juices may be used as water sources

Farms

- Do not use surface water for human or animal consumption. Surface water may be used for sanitary and other non-consumption purposes.

- Other water sources identified as contaminated should not be consumed but may be used for other purposes.
- Water stored in closed tanks or vessels prior to the advisory may be consumed.

Commerce

- Water identified as contaminated should not be used for processing of materials (consumables, containers) which enter the food chain.
- Contaminated water may be used for other industrial and commercial operations if so advised.

Public

- Secure outlets of wells for water identified as contaminated. Do not use reservoir water identified as contaminated. Do not use water for consumption that has not been checked. If approved, this water may be used for sanitary and other purposes.
- Use alternate sources of liquid such as: water drawn and stored in closed containers prior to the advisory, bottled water, bottled/canned beverages and juices and water provided by emergency organizations such as the American Red Cross and the National Guard. Arrangements for alternate, emergency water will be made by the County or State authorities.

6.9.3 Recommend any of the following protective actions to reduce the exposure from ingestion for the fresh fruits and vegetables pathway, fin fish and shell fish pathway, animal feeds pathway (other than pasture grass). This includes crops in the field, in transit to market, roadside stands, markets and in homes.

Commerce

- Remove surface contamination by washing, brushing, scrubbing or peeling.
- Food in sealed packages, cans, cartons, barrels etc. needs no treatment.
- Suspend fishing operations until resumption is recommended. Check each catch made on the day of the advisory. Keep catch covered until transported outside the area of possible contamination.
- Prevent introduction of food type into commerce if it has been identified as contaminated.
- Consider other sources of food originating outside the 50-mile EPZ.
- Do not process or vend unpackaged food if the operations area is contaminated.
- Stay alert for public information bulletins.

Public

- If stored in the open, remove surface contamination by washing, brushing, scrubbing or peeling.
- Food in sealed packages, in refrigerators or closets are otherwise protected, and need no treatment.

- Preserve food before contamination by canning, freezing and dehydration.
- Cooked or raw food may be stored in a refrigerator, closet, box or other closed container.
- Store food to permit radioactive decay of short-lived radionuclides.
- Restrict diet to foods stored in closed containers prior to the advisory or packaged, sealed foods.
- Stay alert for public information bulletins.

7.0 ATTACHMENTS:

None.